



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,238	08/27/2003	Kwang Seong Choi	P69097US0	7126
136	7590	06/09/2005	EXAMINER	
JACOBSON HOLMAN PLLC			VANNUCCI, JAMES	
400 SEVENTH STREET N.W.			ART UNIT	PAPER NUMBER
SUITE 600				2828
WASHINGTON, DC 20004			DATE MAILED: 06/09/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	<i>[Signature]</i>
	10/648,238	CHOI ET AL.	
	Examiner	Art Unit	
	Jim Vannucci	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 27 August 2003.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8-27-03.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munks et al.(6,560,253) in view of Nakao et al.(5,359,434).

Claim 1, figure 2 of Munks discloses a laser(12), a collimator(64) for paralleling the beam from the laser, a beam splitter(26) for splitting the laser beam passing through the collimator into the two directional laser beams, a light-receiving element for receiving one of the split laser beams(40), a filter(34) for transmitting a specific wavelength of the other of the split laser beams, a light-receiving element(42) for receiving the laser beam passing through the filter(34), and a controller(24) for controlling the output wavelength of the laser diode using the signals output from the two light-receiving elements where the filter(34) is tilted at a predetermined angle with respect to the laser beam and locks the wavelength using an incident angle dependency of the laser beam passing through the filter(abstract).

While Munks discloses two light receiving elements, one of the light receiving elements is not an array nor is it tilted.

Figures 7 and 17 of Nakao discloses a tilted light receiving array(7) with multiple elements(13) so that a maximum amount of light can be received by the light receiving element(abstract).

Claim 3, Munks discloses a TEC(col. 17, lines 34-42; and fig. 18, no. 54) that has a thermistor for detecting the temperature and a TEC driver for receiving and maintaining uniform the temperature detected in the thermistor.

Claim 4, Munks discloses angles for the filter in the recited range(col. 10, lines 23-25) and the array(7) disclosed in figure 17 of Nakao can be set at the recited range of angles.

Claim 5, the beam splitter(26) disclosed in figure 2 of Munks splits the laser beam passing through the collimator(64) so that some portion thereof is directed to the light-receiving element(40 or 42) and some portion thereof is directed to the filter(34).

Claim 6, the light-receiving element array(7) disclosed in figure 7 of Nakao has four light-receiving elements(13) positioned at certain intervals.

Claim 7, figure 16 of Nakao discloses a controller that includes an amplifier(21a) and a laser diode driver.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the tilted receive array disclosed in Nakao in place of one of the light receiving elements in the device disclosed by Munks so that the light receiving element can receive a maximum amount of energy as disclosed in Nakao.

3. Claims 2 and 8-10 at a predetermined angle and a predetermined distance, while monitoring the wavelength of the beam of the laser diode, under the temperature controlled by the TEC. are rejected under 35 U.S.C. 103(a) as being unpatentable over Munks in view or Nakao as applied above, and further in view of Doerr et al.(6,275,317).

Munks and Nakao do not disclose a butterfly package.

Claim 2, figure 2 Doerr discloses a filter and a light-receiving element array that are fixed on a sub-mount(120) and that are blocked(col. 9, lines 54-60).

Claim 8, Munks discloses assembling a laser diode, a collimator, a beam splitter, and a light-receiving element on a TEC, and applying an input signal to the laser as referenced above. Figure 19 of Munks also discloses mounting a filter(32). Nakao discloses a light-receiving element array at a predetermined angle and a predetermined distance. Munks discloses monitoring the wavelength of the beam of the laser diode under the temperature controlled by the TEC as referenced above.

Doerr discloses mounting the TEC(fig. 6, no. 170) on a butterfly package(col. 9, lines 58-60) and also discloses a submount(120).

Claim 9, the sub-mount(120) disclosed in Doerr can be mounted with a filter and a light-receiving element array and is a silicon substrate(col. 7, lines 26-27) that can be manufactured with a micro-machining process.

Claim 10, figure 2 of Doerr discloses a pattern or a trench is formed in the sub-mount(120) and filters and other optic elements are mounted therein.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the package and submount disclosed in Doerr for the device disclosed

in Munks and Nakao to reduce the size, cost and complexity of the device as disclosed in Doerr(abstract).

***Correspondence***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 872-9306.



James Vannucci  
James Vannucci